664 other concerning the protection of goods belonging to the sub-
185 jects. There is also a fourth pact wherein Your Highness undertook to take action against any party that should transgress against another party, to punish the offenders, restore looted property, and check the transagressors, according to this treaty, until such time as God wills. This treaty is dated 13th Jumād ath Thani 1342 (1923). It also embodies other conditions which have not been carried into effect.

"A fifth treaty was likewise concluded between Seiyid Hussein bin Hāmid al Mihdhār, representative of the Qu'aiti Government, on the one part, and the Sultan of the Āl Abdulla on the other, on 25th Ramadhan 1344 (1925). Thereafter an agreement was concluded between both the Governments, the Qu'aiti and the Āl 'Abdulla, on the one part, and the Āl 'Awāmir on the other. This pact is dated 12th Rajab 1345 (1926), and in it the Āl 'Awāmir undertook not to interfere with travellers belonging to either Government, or with other travellers, within their respective boundaries, even though they might happen to be in a state of war. This is the sixth pact.

"There is also a seventh treaty between Sultan Salih bin Ghalib bin 'Awadh al Qu'aiti on the one part, and the Sultans of the Āl 'Abdulla on the other. The first Article provides that: 'Both Governments should co-operate to bring about a settlement, and maintain peace and security, and set at rest all agitations and disturbances by any means which will lead to conciliation. In the event of the said measures not being successful they should use all possible power to enforce the same.' In the fourth Article it is laid down that 'Both Governments shall endeavour to take the necessary measures for the security of the routes, and the protection of the poor and others from the effect of the strife and fighting which invariably occur between the tribesmen.'"

The petition bore sixty signatures of the leading inhabitants of the Kathīri part of the valley, and purported to speak on behalf of the "Hadhrami nation". It was addressed to the Qu'aiti and Kathīri Sultans. I do not think that the petition was intended to be on behalf of the inhabitants of the Qu'aiti domain but it was rather directed against the working of Qu'aiti policy *vis à vis* the Kathīri. It was rejected by Sultan 'Umar on the ground that the petitioners were not representative, but it was supported by the Kathīri Sultan.

651 As regards taxation, the position is that goods entering the country
653 are taxed at Mukalla. If they are intended for the Kathīri part of the valley they are often taken by sea to Shihr where they are taxed again. None of this money is used in maintaining security on the road from Shihr to Tarim, and none of it is used to improve communications for the people by whom it is paid. The Al Kaf Seiyids have spent $180,000 in attempting to build a Tarim-Shihr

1: Ingrams G-5 (1934-35)1936 MM2 Hadhramaut MM2

car road. The really difficult part of the construction has been completed, from Tarim onwards towards Gheil. Much of the money was paid out to the Beduins, and in particular the Hamumis agreed that the road should be safe. At the request of the Qu'aiti the route of the road was changed as he was afraid that the Hamumis would have increased facilities for movement and raiding. Large sums of money were then disbursed on the Ma'di tribes through whose territory the Qu'aiti asked that the road should go. There is no doubt that the road could have been successfully completed, and the Al Kaf Seiyids were, and still are, willing to bear the whole cost. Sufficient support, however, was not received from the Qu'aitis and the work was stopped by Sultan 'Umar.

CHAPTER XIII.

THE GOVERNMENT OF THE QU'AITI STATE.

Mukalla is the seat of Government of the Qu'aiti state. His Highness the Sultan, who is an absolute monarch in so far as the internal affairs of his state are concerned, has his principal palace there. The old palace of the Kasadis near the Customs in the centre of the old part of the town has now been turned into Government offices where the *Wazir* and other officials are in daily attendance.

The *Wazir* has a general superintendence over all departments of Government and presides over the *Wazir's* Court (*Hakm ad Dola.*) He is also the Governor of the Mukalla Province. The Treasurer superintends the schools, the dispensary, the passport work, and registration of sales and transfers of land. He sees to all disbursements on behalf of the state and collects certain of the internal revenue. The Mukalla Customs, which were formerly farmed, as the Shihr and other customs still are, is a Government department with a paid staff. The Chief of Customs also superintends the work of the port, though there is a special shipping clerk who prepares shipping papers for the *Wazir's* signature, and there are the usual manifest clerks employed by the Customs. The Commander of the Forces, who is more of a Minister for War, also controls the prison. The uniformed police are under the command of a Shaush, and the slave police are under a slave who is also the police magistrate. The medical officer has charge of the dispensary and in addition performs port health work. He is assisted by a qualified compounder who also has certain municipal duties.

As examples of the monthly salaries paid to officials of the Qu'aiti state, the following may be cited: *Wazir*, $1,000; Chief of Customs, Rs.225; Doctor, Rs.200; Treasurer, Rs.100; Commander of the Forces, Rs.100; English Master, Rs.80; State Photographer, Rs.60. Most of the officials are given quarters.

There was at one time a species of State Council in Mukalla, but it was dissolved by the present *Wazir* and a Council of Qadhis instituted instead. The function of this Council is not immediately apparent. At the time of my visit there was some talk

The sanitary systems, if any, vary throughout the large towns of the Hadhramaut. There are no drainage or sewerage systems in Mukalla. The houses for the most part are equipped with pit-latrines cleared every six months or a year. Waste water runs out from gullies projecting from the walls of the houses. At the time of my first visit there were 25 sweepers in charge of a *muqaddam* who were said to work from early morning till noon, and from two till six, but, apart from the main market street, there appeared to be little evidence of their activities. Since that time the number has been slightly increased, and, under the doctor's superintendence, the streets are somewhat cleaner.

In Shihr the waste water is allowed to settle into pools. As a consequence mosquitoes are a serious pest, but there is said to be little fever. There were no anopheles amongst specimens I captured. In Shibam there is a system of narrow gutters running down the middle of the streets. These become congested with rubbish and are rarely cleaned out, but when they are the refuse is sold.

Water Supply.

The water supply of Mukalla is brought from a reservoir at Baqrein, about four miles distant. The source is a mile further away at Bakazabur where there is a long series of deep wells, mostly protected by a stone coping but with no covering. These wells were constructed by labourers brought from Gheil ba Wazir where there are men " who know how to make waterworks ". The wells are connected at the bottom by a subterranean passage, used by those who clean the channel, along which the water flows till it emerges into an open cement channel leading to the reservoir at Baqrein. This reservoir is divided into compartments and the water passes through them into a delivery pipe. The outfall to the delivery pipe is partially protected from debris by a wire trap, and just outside the reservoir there is a covered manhole. There is no filter system and for the greater part of its length the supply is entirely unprotected, but the water is clear and apparently clean. It is conducted in pipes to the side of the mountain, along which it runs in a covered masonry channel, except where it is carried across gaps in pipes supported by piles. In the town there are reservoirs fitted with taps from which the water carriers draw their supply. Water supply is only laid on to the palaces and a few mosques.

The work was planned and begun by Sultan 'Awadh as a *Waqf* and was completed by Sultan 'Umar. It reflects great credit on the Mukalla administration, and if some protective measures were adopted would be, I should imagine, an unimpeachable supply. It is fortunate that cholera and typhoid are apparently unknown in Mukalla as it would be extraordinarily easy to contaminate the supply which, as I say, is unprotected, unfiltered, and not chlorinated.

There are several wells in Mukalla in which the water is brackish. The palaces, the Wazir's house, and the guest-house are fitted with

1: Ingrams G-5 (1934-35)1936 MM2 Hadhramaut MM2

The Kathīris have no organised Governmental institutions in the accepted sense of the word, though the Sultan and his supporters, including the wealthy Seiyids of Tarim and Seiyun, are very anxious for progress. Sultan 'Ali's state income is estimated at $20,000 a year in respect of Seiyun, Taris and Mariama; $6,000 of this is a direct contribution from the Al Kaf Seiyids, and the remainder consists of taxes on dates and on goods entering Seiyun. The whole sum is expended on state services, for Sultan 'Ali has a private income derived from Singapore. He maintains a force consisting of 200 indifferently armed slave soldiers in Seiyun, and 200 in Tarim. 643 642 651 565

In Tarim the Al Kaf contribute $12,000 a year to the city Treasury. There is a Town Council which organises the local taxation, and thanks to the Al Kaf Seiyids its affairs are said to be run in a very business-like way, for its budget balances. In normal times the political expenditure on maintaining peace between Tarim and the neighbouring tribes is perhaps $4,000 a year, and this is all borne by the Al Kafs. But to this normal expenditure is often added extraordinary expenditure as, for instance, in a case which occurred about May 1934, when Seiyid Bubekr, the second brother of the family, spent $12,000 in settling a dispute between Tarim and the Tamimis. 651 632 565

In Tarim and Seiyun there is a doctor and dispensary, but they are supported by the Seiyids. At the time of my visit, the doctor, a Punjabi, was on leave and such work as was being carried on was being done by a dispenser. No great public use was made of his services. The dispensary costs the Al Kafs about $1,000 a month, and they spend $2,000 a month on charities and roads. As regards their expenditure on communications it should be recorded that they built all the water pools on the caravan route from Tarim to Shihr, that they spent $7,000 on building a pass at Al 'Arsha for caravans, and that Seiyid Bubekr has spent over $180,000 on road making between Tarim and Shihr. 743 565 735 653

The schools in Kathīri territory are almost entirely supported by the wealthy Seiyids. There are two Ribāts, religious foundations, principally supported by *Waqfs* (religious endowments) for the teaching of religion and philosophy. Of these one is in Seiyun and has an attendance of 40 students, and the other is in Tarim with an attendance of 120. The Saqqaf family of Seiyids maintain two schools in Seiyun, one containing 500 boys and seven teachers, the other 100 boys and four teachers, and the Al Kafs, who also contribute to the Ribāts, run two schools in Tarim. One of these formerly had an attendance of 400 boys but it is now only attended by children of the family, numbering 54. The other, a public school, accommodates between 300 and 400 boys. The Al Kafs also run one if not two schools at Khoreiba in Wadi Du'an in Qu'aiti territory. They are, in fact, the only people undertaking educational activities in a wider sense in that province. I believe, too, that they support the private schools in Mukalla and Shihr. 565 871

18:Ingrams G-3 (1934-36)1938 MM2 Hadhramaut MM2

1933. In these last eighteen months however, and particularly during the last winter, the number of visitors, official and otherwise, runs into over one hundred, in fact, into several hundreds if naval visitors and tourists on the coast are included, for Mukalla has recently had the fresh experience of seeing bus loads of tourists from steamers driving through its street.

The more frequent and more intensive incursion of European visitors is of course in itself a great contrast with the recent past, but I think that the contrast which most strikes visitors who have returned to the country in the past year is the comparatively peaceful conditions which now prevail. Little more than a year ago every Badawin and tribesman in the country carried his rifle with him, even to walk across the street. Blood feuds were widespread, and even harmless travellers of the unarmed classes were at times likely to lose not only their property but their lives. Travellers by motor car had to take with them an escort when passing from village to village. In places there were extensive systems of trenches to pass from the villages to the fields, and I know of people who have spent as much as twenty years without getting beyond their own doors.

Now however all this has passed and it is comparatively rarely that you see a tribesman carrying a rifle, indeed many of them do not even carry the *jambiyas* or curved daggers which are almost as much a part of their dress as a walking-stick was of ours. How all this has come to pass is more a matter of the history of the Hadhramaut than its geography, but I should simply like to say that it was largely through the will of the people who have a genuine desire for peace and for the following of peaceful pursuits.

This new peace has resulted in a much greater contact between tribes and between different parts of the country and has made possible a great extension in communications. Eighteen months ago there were about half a dozen motors on the coast and about sixty in the interior, carried up by camels. By the completion of the Al Kaf road Tarim has been linked with Shihr and passenger-carrying lorries ply almost daily between the coast and the interior. When I left the country a couple of months ago there were at least two hundred motor vehicles in it and every ship was bringing one or two. Many more car tracks have been made and cars now go to almost all parts of the Hadhramaut, westwards to Al 'Abr and eastwards to As Som as well as up or down branch wadis. The Mukalla Government is also constructing another remarkably good motor road to the Hadhramaut which is being built northwards from Mukalla and southwards from Du'an. Something over 20 miles of the former and 10 of the latter had been completed when I left; about 60 miles remains to be done, of which the greater part is over the flat *jols* and offers no particular difficulties of construction. Starting from Mukalla you can now motor at least 300 miles in the Hadhramaut without recrossing your tracks, and there are over 500 miles of tracks altogether.

The possibilities of air transport have also been greatly improved. There were, eighteen months ago, eight landing-grounds in the five Sultanates in the eastern part of the Protectorate of which only three, Mukalla, Shibam, and Qishn, were used at all frequently. New landing-grounds have been constructed at Tarim, Seiyun, Hurnidha, Al 'Abr, 'Azzan, Balhaf, Risib,

22: Reilly G-3 (1933-41) 1941 MM2 Hadhramaut MM2
ADEN MM1

long been distracted by blood feuds and brigandage. An energetic Agricultural Officer appointed by the Colonial Office has initiated experiments that are producing very promising results on the Audhali plateau to the north-east of Aden, and in other districts where water is available for irrigation. Medical and educational progress is as yet only in its initial stage, but a beginning has been made in the establishment of local dispensaries, and the institution at Aden of a Protectorate College for the sons of chiefs has met with encouraging success.

It is a fundamental principle of our policy in the Aden Protectorate that the Arab character of the country must be preserved. In this respect the Protectorate differs from the colony of Aden, which it adjoins. The colony is a small territory comprising the town and port of Aden; and, although the majority of its inhabitants are Arabs, it has long been a cosmopolitan community, in which Europeans, Indians, Jews, and Somalis mingle with the Arabs in friendly co-operation and a common loyalty to the British Crown and administration. The Protectorate, on the other hand, is recognized to be wholly Arab country. There is no intention on the part of the British Government to annex any part of it or to introduce any direct British administration. Our ambition and our hope are to produce in Southern Arabia an example of friendly and willing British and Arab co-operation, in which we give the best we can in the shape of advice and technical help without disturbing the national characteristics of the people. All efforts at reform are fated to meet with opposition from some quarters, and especially from those that are interested in the maintenance of old abuses, and our experience in the Aden Protectorate is no exception in this respect. On the whole, however, we have received a cordial, and often an eager, response. British officers working in Aden and the Protectorate have been rewarded not only with understanding and support, but also with liking and friendship that have bound them by personal ties to these Arabs, who have so much in common with the British in their individualism, their adventurousness, their humour, and their love of freedom. Now, when the Empire is at war and is passing through critical days, it is a pleasure and an encouragement to see the spontaneous loyalty and affection that have been displayed by the people of Aden reflected also in the Protectorate that we so long neglected but are now at last trying sincerely to befriend. In the towns and in remote villages in the mountains the people have gathered in their mosques to pray for British victory. Their friendship did not falter in the dark days of last summer, and now that victories have

24:Meulen and Wissmann T-3 (1931)1932 MM2 Hadhramaut MM2

often very poor in water, but, over and above this, countless internal wars make traffic dangerous and force travellers to go by very circuitous routes. This is why the Ḥaḍramī seldom knows his own country well. A learned Ḥaḍramī whom I knew formerly said to me quite truly: "I know all the volcanoes of Java and all the stations on its main railway lines, but I cannot give you any information about the wādīs and mountains a few hours distant from my home." The Sultan of Sēwūn is a relatively favourable exception to this rule in that he has seen Aden; he went there to attend a conference convened by the British authorities, where an attempt was made to arrive at a peaceful settlement of the differences between the Qeᶜēṭī and Kathīrī rulers. He desires to see more of the world, including Java, the land in which three quarters of his subjects have interests. The great difficulty, however, is to get over the Qeᶜēṭī barrier, and for that an aeroplane is necessary. The site for the future aerodrome which was shown to us seemed quite suitable.

In the evening there is again a gathering on the roof-terrace at ᶜIzz ed-Dīn. The subject brought forward for discussion is the poverty of Ḥaḍramaut and how relief from it may be obtained. In and around Sēwūn the water-level is not deep, which fact accounts for the prosperous palm-groves and fields of *dhura*. But the water-supply would have to be enlarged if it is to help the people really forward. This cannot be done by motor pumps, because they are too expensive in practice. The pump at Hēnin has to work eight hours a day to keep in existence a few acres of *dhura* and 200 small palm-trees, and that costs more in kerosene and lubricating oil than can ever be made from the produce of the irrigated land. The soil in Sēwūn is better and water nearer to the surface, and yet experience has taught that here also the motor pump does not pay. Can matters not be improved by means of artesian wells? The Sultan asks us to help by sending an expert with the necessary instruments. He says that at one time, in the days of the Ḥimyaritic kingdom, Ḥaḍramaut must have been

24:Meulen and Wissmann T-3 (1931)1932 MM2 Hadhramaut MM2

795 312 ●653 prosperous. Great irrigation works for collecting and distributing water were constructed. There is no longer united action, the reservoirs have gone to wrack and ruin, and now, every year, quantities of life-giving water stream down to the sea and are wasted. This matter was discussed again thoroughly later in Terīm.

000 May 26th is the day fixed for our departure for Terīm. In the morning, cars are placed at our disposal to enable us to make a tour through the city and its surroundings for taking photographs. We thankfully seize this opportunity of making a pictorial record of some of the fine houses and views of this city in a forest of palms in the midst of the desert. In photographing the es-Saqqāf town house it is impossible to evade the pressing invitation of Sayyid Hūd es-Saqqāf to come in and have a glass of tea, so we promise to do so as soon as we have finished photographing. We cannot pass the cemetery without taking snapshots of some graves with light-green cupolas with unostentatious, beautiful, open-work borders. There are also several small mosques in picturesque situations. The Sultan kindly allowed us to admire the city of Sēwūn from the roof of his palace. Noticeable here in this great palace are the order and cleanliness which literally gleam out at the visitor. It is especially in the palaces, with the many soldiers quartered in them and with the many guests, that the contrary is often the case. It takes some time before the women in the corridors and on the staircases, where we have to pass, can be warned of our approach. When this has been successfully done we saunter through deserted passages of mud and ascend by well-constructed even staircases to the shining white roof. Here we stand on the most beautiful site in Ḥaḍramaut. Terīm does its best to equal it and has more to show in great palaces, but here is grace, here is the happy variation of deep-green, luxuriant gardens and fine summer residences, here the Ḥaḍramī style, pure and harmonious, has been adhered to.

In the house of the namesake of Hūd, Ḥaḍramaut's great prophet, the promised glass of tea is awaiting us. The grey-

7: Gt. Brit., Colonial Office G-3 (1949-50) 1951 MM1 Aden
Hadhramaut mm2

to make it one of the most favourable for many years. The rains of November and December were judged to have been the heaviest seen for thirty years.

Unfortunately the cultivator was in many areas, particularly the eastern districts, unable to make full use of these favourable conditions. This was the result of the bad season of 1948 which had caused famine in the Wadis 'Amd and Rakhya of the Hadhramaut, and continued to cause famine for the first four months of 1949. Famine relief and rehabilitation measures were largely responsible for getting farmers in these western Hadhramaut districts back to work, and by the end of the year there was little indication that a famine had existed in the early months of the year. In the Hadramaut important famine relief and famine prevention measures were adopted ; of outstanding importance was the introduction of a pump scheme financed by the States, and by the end of the year considerable progress had been made with this scheme. Conditions were severe in the 'Aulaqi districts of the Western Protectorate, but other districts, notably Abyan, had surplus grain stocks, and the districts which were short were able to draw on these supplies and move them, mainly by camel transport, to where needed.

The year 1949 saw great expansion in the Abyan scheme ; offices and staff buildings were built, supplies were accumulated, and important irrigation work was extended, particularly in the region of the Wadi Hassan. The year saw the emergence of Abyan as a successful producer of long staple cotton, and the harvest from some 82 acres (which averaged 1,750 lb. of seed cotton to the acre) was ginned on a roller gin in Abyan, pressed on a hand press in Aden, and exported to Liverpool for sale to the Raw Cotton Commission. Planting for the 1949–50 crop was extended to over 1,000 acres.

Rainfall, Crop and Livestock Conditions

Saif Rains Season. An abundant Saif rain was received in almost all districts of the Protectorate in 1949. In parts of the Eastern Protectorate the rains came late, but were heavy ; and in the Hadhramaut considerable destruction was caused to irrigation works from the resulting floods. The great Nuqra Dam, which had stood successfully for the previous two flood seasons, received the full weight of the combined floods of the Wadi 'Idim and Wadi Ser and was breached owing to a blow-up of the apron caused by excessive up-stream pressure.

The Saif rains were badly needed. They gave the cultivator, hard pressed through the previous bad season, a chance to grow grain and fodder crops with which to build up his condition in readiness for cultivation in the Kharif season.

Kharif Rains Season. Rain followed close on the finish of the Saif, and in almost all districts the rainfall was sufficient for the needs of the cultivator. In November, 1949, the Protectorate was blessed with that rare visitation, a general winter rainfall, which fell with exceptional heaviness, particularly in the north-eastern areas from Beihan across

7; Gt. Brit., Colonial Office G-3 (1949-50) 1951 MM1 Aden
Hadhramaut mm2

accounts section the position was particularly serious; but equally important was the lack of essential hydrological data on such matters as river discharges, the availability of suitable storage sites, studies on percolation and so on. Without such information progress must be delayed. 654

As mentioned earlier, the X1730A type of cotton planted on 82 acres in 1948, proved a great success. The crop was ginned and marketed by the Board, and arrangements with cultivators for the new season's planting resulted in an extension of the acreage to 1,097 acres. At the end of 1949 the crop showed great promise, and in many areas appeared even better than the previous year's crop. 248 242 654

Grain, oil-seed and fodder production was satisfactory, though grain yields were reduced in many areas through double-cropping the land with a sorghum fodder crop in the Saif season and then a grain crop in the Kharif.

A great deal of the land in Abyan which has been well irrigated for the past five years is now becoming heavily infested with weeds, mainly the weed grass *Desmostachya bipinnata*. The introduction of cotton as a cleaning crop and the "drying up" and resting with or without cultivation, of these heavily infested lands is now recognised as an urgent matter. In order to tackle the weed problem the Board increased its tractor strength by the purchase of three Fowler Diesel crawler tractors in the last quarter of 1949. 654 137 242

Another problem which came to notice towards the end of 1949 was the rapid rise in the height of the water table in certain areas. The area involved does not exceed 300 acres, but already in this area (where in places the water table has risen to within six feet of the surface) salts are appearing in the upper layers of the soil, and vegetation, particularly in the seedling stage, has been affected. It was noticed that cotton, once established, flourished and appeared exceedingly healthy on these salt-impregnated soils. 133 242

Anti-Famine Measures

In the first four-and-a-half months of 1949 until general rains fell over the Eastern Protectorate, famine again threatened human life in the Hadhramaut. Relief measures were introduced, as in the previous famine, but this time so promptly that practically no deaths from famine occurred. Again aircraft of the Royal Air Force came to the rescue and dropped grain supplies to the worst affected areas. Large quantities of grain were moved inland by motor transport and any camel transport that could be mustered; at the same time large numbers of the destitute, particularly women and children, were brought down or walked down to the coastal towns, where they were accommodated in refugee camps and fed. To employ labour on relief works an extensive programme of road construction, and irrigation repair works and new construction was undertaken. 731 [653]

When rain fell, it was again found necessary to issue loans to

7: Gt. Brit., Colonial Office G-3 (1949-50) 1951 MM1 Aden
Hadhramaut MM2

731 cultivators to get them back to their villages and re-establish them in time to sow their crops.

The famine of 1948–49 struck the western districts of Hadhramaut, where the situation was complicated by the dependence of these districts on rain and run-off water and flow irrigation from the wadis for crop production, and where large sections of the population relied on remittances from Hyderabad, which had been absorbed into the Indian Union, and from which transfers of currency had become difficult. Finally the repatriation of several thousand Southern Arabians, many of them from the tribes most seriously affected by the famine, brought further hardship.

Little could be done to improve agricultural conditions rapidly in these western areas of the Hadhramaut. It was therefore necessary to look to the lower areas of the main wadi where water is obtainable at easy levels, and farming can be secured by permanent irrigation.

Animal power for use on lift irrigation, and dependent on fodder crops cheaply produced only from the flood-irrigated areas, was now judged to have reached its maximum use. The Famine Relief Commissioner—in this case the Acting Resident Adviser—was advised that a large-scale pump scheme, using diesel-engined units, was the only measure which appeared to show promise of quick improvement in food production. The Commissioner and the States accepted this advice in detail and made important decisions in council which were framed to abolish all taxes on diesel engine and pumps for use on irrigation work, and on diesel oil (gas oil), and to purchase and supply cultivators with machinery for cash or for deferred payments.

731 489 The States further caused revision of an important agreement with Beduin tribes regarding the transport of fuel. In the past all trade goods, including petrol, kerosene oil, and lubricating oil, had been carried by camel caravans owned by Beduin tribes occupying the country between the coastal plain and the great wadis of the interior. With the opening of the road to the interior some fourteen years ago it was agreed that motor transport should carry only passengers and small quantities of personal luggage. In the present emergency the Beduin leaders were told of the need for motor transport to carry diesel oil for a famine relief scheme and were shown that the normal system of supplying diesel oil was in 44-gallon drums which have to be broken and repacked in drums of a size convenient for camel transport. The Beduins agreed to waive their rights, and so, for the first time in Hadhramaut history, a truly mechanised scheme, independent of the camel caravans—which are entirely dependent on fodder grazing and water supplies, which may fail in a drought—was evolved.

653 406 312 It was decided to spend up to £36,000 on a pump scheme. The Famine Relief Commission, acting on behalf of the States, arranged to purchase the machinery and to sell outright for cash or on a deferred payment system, in which case 25 per cent was added to the price for repayment over a four-year period. Speed was essential, and quotations and prices were examined for nearly every type of diesel-engined

7: Gt. Brit., Colonial Office G-3 (1949-50) 1951 MM1 Aden
Hadhramaut mm2

pumping unit in the 5-horse-power to 7½-horse-power range. Quotations for the better known slow-running machines had, unfortunately, to be ruled out because of the long period required for delivery, usually six months to two years. High speed engines could, however, be secured and an order was accordingly placed with a well-known firm of irrigation equipment manufacturers. From this firm 60 7½-horse-power and 60 5-horse-power units were obtained, together with piping and fittings. Owing to steel shortages, only rubber piping for delivery lines and armoured hose for suction lines could be obtained.

By the end of 1949 80 per cent of the direct coupled machinery had been allocated and most of it was in use, while the belt-driven machinery was on hand and awaiting accessories and locally-made fittings, such as bed plates and water tanks.

A difficulty which became apparent early on in the scheme was the reluctance of local agents in Aden—who had sold the machinery to the Hadhramaut States—to appoint efficient sub-agents in the Hadhramaut, who would provide servicing facilities and supply spare parts promptly. By the end of 1949 the Famine Relief Commission was employing a mechanic to inspect and service pumps operating in the scheme. Further unexpected difficulties arose because no spare parts had arrived in the Hadhramaut by the end of 1949 and it had become necessary to "cannibalise" seven of the 7½-horse-power engines and one 5-horse-power engine, in order to secure the spare parts required. In spite of these difficulties, there was definite progress, particularly among the more industrious cultivators who were able to equip their wells in readiness for the winter wheat season. Among the better farmers a 5-horse-power unit was made to water 5 acres of crops, while 7½-horse-power unit would do 7½ to 8 acres.

In 1950, in order to cope with repairs and servicing, the Quaiti and Kathiri States contributed to a pump scheme which included a workshop under European management and mechanics to service the pumps in the field. The workshop held adequate spares for the machines imported by Government, and the scheme benefited by the visits of engineers from several British manufacturers of pumping units.

By the end of 1950 no fewer than 280 diesel-driven units, Government sponsored or privately owned, were operating in the Hadhramaut.

A major drive in the construction of dams and deflectors was begun late in *1949 and continued during 1950. Lujnas (local councils)* were formed to finance and administer the construction of dams at such places as Muthawwar Du'an, Soran, Dhahban, Jahail, Bin Saheil, Al Koda, Khushm Assawahili, Ad Dhib, etc.

Works on the Nuqra dam, which is being constructed as a permanent cement erection financed from Colonial Development and Welfare grants, made tremendous progress during 1950.

In May, 1950 too, a Fowler diesel tractor with the bulldozer attachment was imported into the Hadhramaut to assist with the work of building earth banks.

7y Gt. Brit., Colonial Office G-3 (1949-50) 1951 MM1 Aden
Hadhramaut MM2

491 cases new roads cut through difficult country. Nearly all roads are extremely rough, and surfaces are rarely repaired.

The following routes are open for motor traffic :

				Miles
Sheikh Othman	to	Lahej	.. .. ..	16
„ „	„	Tor al Bahar	.. ..	64
„ „	„	Museimir	.. .. ..	61
„ „	„	Dhala	.. .. ..	88
Aden ..	„	Zinjibar	.. .. ..	40
Zinjibar	„	Ja'ar	.. .. ..	16
„	„	Al Husn	.. .. ..	16
„	„	Dirjaj	.. .. ..	17
„	„	Sheikh Abdulla	.. ..	6
„	„	Shuqra	.. .. ..	30
Shuqra	„	Am Surra	.. .. ..	30
„	„	Lodar	.. .. ..	50
„	„	Mudia	.. .. ..	68
„	„	Am Quleita	.. ..	78
„	„	Ahwar	.. .. ..	76
„	„	Irqa (E. Aden Protectorate)		48

509 A regular air service by Aden Airways was maintained during the summer months between Aden and Mukeiras, and was used for transporting vegetables for the Aden market. Other existing landing grounds, which are used only by the Royal Air Force, are situated at Shuqra, Ahwar, Lodar, Dhala and Beihan.

492 Where no motors can yet penetrate the traffic of the country is carried on camel caravans, which still travel to Aden in large numbers, or in the more mountainous districts small donkeys are employed for both passengers and goods.

Eastern Aden Protectorate

653 The famine of 1948–49 showed the necessity for all-weather roads
491 for motor transport from the coast to the interior. In a grain shortage
499 camel transport is of little use, the camels becoming too weak from lack of fodder to be really dependable.

In 1949 a request for a Colonial Development and Welfare grant of £15,360 for the construction of all-weather roads to the Hadhramaut (Scheme D.1035) was approved and early in 1950 work began on the construction of drains, Irish bridges, culverts, and weeping bridges, on the Al Kaf road to the interior. In addition, the dangerous Maadi Pass on this road was reconstructed, and a large river-bed on the road between Mukalla and Riyan was successfully bridged saving some miles of detour. Attention was also given to the task of reconstructing the west road to Du'an and the Hadramaut to make it passable all the year round.

Later in 1950 approval was given by the Secretary of State for an additional £15,000 for the further improvement of internal com-

7: Gt. Brit., Colonial Office G-3 (1949-50) 1951 MM1 Aden
Hadhramaut mm2

munication in the Eastern Aden Protectorate—Scheme D.1373. Of this project the road between Bir Ali and Balhaf has been completed, work is now proceeding on the Meifa-Bir Ali stretch, and a start was made in December, 1950, with the new Jahi-Rubat (Du'an) road. 653 491 499

Further, a road was constructed in the north linking Shibam and Henin with the tribal centre of Reidat-as-Sei'ar on the edge of the Ruba' al Khali and resurfacing of the Wadi Hadhramaut road between Tarim and Qassam, Shibam and Qatn and Ajlaniya and Qa'udha was carried out to facilitate transport in the main agricultural areas.

Considerable help was given by the former Director of Public Works, Aden and the Executive Engineer, Aden, who visited the Eastern Aden Protectorate and submitted valuable reports, with recommendations as to the repair and maintenance of roads, which are being implemented to the extent that local finances and labour resources permit.

Air Communications have also improved in the past two years. A weekly service by Aden Airways Ltd. was maintained between Aden and Riyan (17 miles from Mukalla) and late in 1950 was extended to Al Qatn. The interior of the Hadhramaut is now within reach of Aden and the protracted delays travellers formerly faced are a thing of the past. 509

Special planes were flown direct from Riyan and Qatn to Hedjaz for the 1950 pilgrimage.

Sea Communications were maintained by occasional visits of coastal steamers based on Aden, and more frequent trips by motor dhows and small powered craft. 505

Chapter 11: Geography and Climate

SITUATION AND AREA

The Aden Protectorate which can be more conveniently described administratively and geographically by dividing it into two areas, the Western and Eastern, has a total superficial area of about 112,000 square miles. It is bounded on the east by the western boundary of the Sultanate of Muscat and Oman, on the north and west by the Ruba' al Khali (or Empty Quarter) and the kingdom of the Yemen (whose southern boundary was temporarily established by Article III of the Treaty of Sana'a of 11th February, 1934, by which His Majesty's Government and the Government of the Yemen agreed to maintain the *status quo* as on the date of the signature of the treaty), and on the south by the Gulf of Aden and the Indian Ocean. The Aden Protectorate seaboard starts at Husn Murad (opposite Perim) on the west, and runs for 740 miles eastwards to Ras Dhurbat Ali, where it meets the frontier of the Sultanate of Muscat and Oman. 101 131

8:Gt. Brit., Colonial Office G-3 (1951-52)1954 MM1 Aden
Hadhramaut MM2

ADEN PROTECTORATE

PART IV

Chapter 1: General Review

WESTERN ADEN PROTECTORATE

642 THE years 1951 and 1952 were marked by (a) Government penetration
648 into the Upper Aulaqi Sheikhdom (Maan) at the invitation of the Ruler and the subsequent formation of the United Administration of Maan and Khalifa; (b) the conclusion of two Advisory Treaties with the Upper Aulaqi Sheikh and Audhali Sultan (May and July, 1952)
647 and a joint Advisory and Protectorate Treaty with His Highness the Sultan of Lahej; (c) the formation of the Fadhli—Lower Yafa' Health Board; and (d) the formation of the Lower Aulaqi Regency Council in Ahwar (August, 1952).

Politically the period under review was one of consolidation and development of the administrations of the various States in the Protectorate.

438 The Abyan Board did well in 1951 when it sold 9,890 bales of cotton for £867,088. In 1952 the rains were not so plentiful with the result that only 6,300 bales were sold for £725,810.

648 Relations with the neighbouring Kingdom of the Yemen remained difficult in spite of the Modus Vivendi Agreement concluded with it in London in January, 1951. Interference in affairs well inside the Protectorate boundary was a cause of friction.

EASTERN ADEN PROTECTORATE

622 In the Qu'aiti and Kathiri States the main constitutional advance has been in the setting up of town and village councils to deal with local affairs.

659 Of necessity both Administrations have been preoccupied with measures to combat the threat of food shortage which must always be
654 faced in this region of uncertain rainfall. The States and local author-
653 ities have maintained dumps of grain, which are designed to tide over a period of scarcity before imports can arrive from the coast, and a
245 periodical check is made on resources of motor transport to ensure that distribution of supplies is not held up by failure of camel traffic in an emergency. Positive measures have been taken to increase local food supplies. Funds have been allocated for loans to farmers to purchase pumps to increase areas of cultivation. Schemes for the rebuilding of dams and for flood control have been put into effect. Particular attention has been paid to the rehabilitation of date palms.

S:Gt. Brit., Colonial Office G-8 (1951-52)1954 MM1 Aden Hadhramaut MN2

Mukalla Regular Army (paid by Qu'aiti State)	17 Officers 332 other ranks	Security in the Qu'aiti State.

In addition there are the following police forces.

State	*Force*	*Establishment*	*Notes*
Qu'aiti	Mukalla Police	101	Paid by Qu'aiti State.
	Qu'aiti Armed Constabulary	530	Paid by Qu'aiti State for rural districts.
Kathiri	Civil Police	25	For towns of Sai'un, Tarim and Hautaf Ahmed bin Zain. Paid by Kathiri State.
	Kathiri Armed Constabulary	112	For rural districts. 18 paid by Kathiri State, balance by Her Majesty's Government.
Wahidi	Wahidi Tribal Guards	232	These carry out police duties, in addition to garrison and security roles. 93 paid by Wahidi States, remainder by Her Majesty's Government.

Chapter 9: Public Utilities and Public Works

WESTERN PROTECTORATE

There are small electric power plants run by the Lahej Sultanate for a few domestic consumers and by the Abyan Board for its own domestic and workshop requirements.

There are no gas installations or public water supplies other than the irrigation projects described in Chapter 6.

There are organised Public Works Departments in the Lahej and Fadhli States which are mainly occupied in the maintenance and construction of public buildings and roads.

EASTERN PROTECTORATE

There is a small power-house in Mukalla publicly administered and owned. The voltage is 240 volts, 3 phase, 50 cycles, A.C., driven by three engines with a capacity of 49, 110 and 220 B.H.P. respectively. The total number of consumers is 700 and the annual output is 114,268 units.

Public Works Departments exist in the Qu'aiti and Kathiri States.

8:Gt. Brit., Colonial Office G-3 (1951-52)1954 MM1 Aden
Hadhramaut MM2

653 Their chief function is the construction and maintenance of state buildings and roads throughout the territories. In the main towns in the Qu'aiti State the department is responsible for the upkeep of the conduits bringing in water from springs outside. All air landing grounds, except Riyan, are maintained by the Public Works Department of the two States.

Chapter 10: Communications

WESTERN PROTECTORATE

494 491 Increasing use is being made of motor vehicles. These are for the most part driven along sandy beaches, dry river beds or across open desert, but in some places tracks have been improved and in a few cases new roads cut through difficult country. Nearly all roads are extremely rough and surfaces are rarely repaired.

The following routes are open for motor traffic:

	Miles
Sheikh Othman to Lahej	16
" " " Tor al Bahar	64
" " " Museimir	61
" " " Dhala	88
Aden to Zinjibar	40
Zinjibar to Ja'ar	6
" " Al Husn	16
" " Dirjaj	17
" " Sheikh Abdulla	6
" " Shuqra	30
Shuqra to Am Surra	30
" " Lodar	50
" " Mudia	68
" " Am Quleita	78
" " Mahfid	145
" " Habban (Eastern Protectorate)	195
" " Said	196
" " Nisab	253
" " *Beihan al Qasab*	*373*
" " Ahwar	76
" " Irqa (Eastern Protectorate)	124

509 712 A regular air service by Aden Airways is maintained between Aden and Mukeiras. Other landing grounds, which are used only by the Royal Air Force, are situated at Shuqra, Ahwar, Lodar, Dhala, Beihan, Qoban (Upper Aulaqi Sheikhdom) and Sah (Upper Aulaqi Sultanate).

492 Where no motors can yet penetrate, the traffic of the country is carried on camel caravans which still travel to Aden in large numbers; in the more mountainous districts small donkeys are employed for both passengers and goods.

205 There are no post offices in the Western Protectorate.

654

654 RESEARCH AND DEVELOPMENT--government-supported research in applied science (e.g., agriculture, fisheries, mining, forestry, nutrition, medicine); public extension and demonstration services; government subsidies to weak or essential industries (e.g., airlines, shipping, agriculture); exploration; coast, geodetic, and geological surveys; meteorological research and weather stations; etc. See also:

Mining and forestry	31	Agricultural science	242
Water and air transport	50	Exploring expeditions	484
Cultural goals	165	Military research	711
Marine industries	238	Public Health	744

Sultan Awadh died in 1909 and was succeeded by his son Ghalib, a man of advanced views, who was extremely anxious for the development of his country in which he established peace and good order. His application for, and financing of, a mission to investigate agricultural and mineral resources of his country deserves special mention. He approached the High Commissioner for Egypt, and in 1919 Mr. O. H. Little was sent to report on the mineral resources and Mr. H. M. Heald on the agriculture. Mr. Little's report appeared in 1925, "The Geography and Geology of Mukalla," and the results of the agricultural survey appear in Mr. Heald's official report.

Sultan Ghalib died, universally regretted, in 1922, and was succeeded by his brother 'Umar, whose achievements will sufficiently appear elsewhere in this report. The present Sultan, whose accession to the Mukalla state was determined by the will of Sultan Ghalib, succeeded his uncle in March 1936.

The late Qu'aiti Sultan was absent from the country during my visit, and in fact the greater part of his reign was spent in India. Just prior to my visit, however, he had performed a tour of the Hadhramaut, and this was the first occasion on which a reigning Sultan had undertaken the journey. Leaving Mukalla on 29th July His Highness, who was accompanied by his *Wazir*, other officials 200 soldiers and a brass band, arrived at Wadi Du'an on 4th August. He stayed in Du'an six days and left for Hajarein on the 10th August. The party reached Hajarein on the evening of the 11th, and next day left by car for Meshhed. On the 14th, Hureidha was reached and Haura the same evening. On the 15th, His Highness proceeded to Al Qatn where he spent two days, and left on the 17th for Shibam where he stayed seven days, during which the Kathīri Sultan visited him with a large retinue and invited him to the Kathīri part of the wadi. Sultan 'Umar arrived at Seiyun on the 24th and was well received. He proceeded next day to Tarim, and on the 26th visited 'Einat, returning to Tarim the same day. On the 27th he returned to Shibam, where he stayed a further week before going to Al Qatn on 3rd September. On his way back to Mukalla, which he reached on the 14th, Sultan 'Umar visited

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The Naqib succeeded in procrastinating until his troops returned from Du'an, when war ensued and the Qu'aitis were defeated. This war was known as the Nuzia or struggle for half the share.

The Qu'aiti then had resort to the British Government who ordered the Naqib to pay the amount claimed. On his failure he was removed from Mukalla, and thus in al Hijja 1299 (A.D. 1882) Mukalla and its dependencies came into the possession of 'Abdulla and 'Awadh bin 'Umar.

In Muharram 1307 (1888) the Qu'aiti entered into a treaty with the British, and was recognised as Sultan of Mukalla and its dependencies. When 'Abdulla died, there was a dispute between 'Awadh and the sons of 'Abdulla as to the paramountcy. The British Government intervened and ordered the removal of 'Abdulla's sons in consideration of compensation to be paid. Then Sultan 'Awadh and his descendants became the rulers of the whole country.

1:Ingrams G-5 (1934 35)1936 MM2 Hadhramaut MM2

by men and also serve for fodder. It is sold by *ma'bar*, a basket of about 30 to 40 lb. The price for eight baskets is from one to three dollars.

Hanit (cooked and dried *tamad* fish). About fifteen to twenty *bahars* of this are made a day in Mukalla and sold for local and up country consumption.

Safif (dried *tarnak* and *tamad* fish). This used to be made only from the *tarnak* but now includes *tamad* as well.

Lakhm (dried shark). A great deal is prepared in Mukalla and one *frasila* costs one and a half to two and a-half dollars.

Rish (shark fins). A certain amount of these are exported to China.

The fish manufactories have been removed from the town of Mukalla, a sanitary measure for which credit is due to Sultan 'Umar. The drying-grounds and godowns for *wazif* are situated beyond Therb, the camel park, outside the western gate. Here too there are old fish-oil tanks. The drying of fish for human consumption takes place at Al Khalf, east of the town, and here large godowns for storage and export are in process of completion. Dried fish forms a staple article of diet of the population. It is also a valuable manure and a widely-used fodder for animals. The extent of this coastal industry may be judged by the millions of gulls lining the seashore and the ever-pervading smell in the coastal towns.

Mr. Heald, referring to the fish-curing industry, writes " Along the coast in the various villages, a primitive fish-curing industry was carried on for sale in the interior, which consisted merely of digging a hole about one yard deep and half a yard broad, lined with stone; in this, wood was burnt and then the larger-sized fish were placed in the hot ashes and covered over and left for 24 hours, afterwards taken out and sent up to the interior for sale. I was informed that the cured fish would keep for a considerable length of time, but, as a word of warning to intending travellers in this country, I strongly advise them not to allow any of their luggage especially bedding to be put on the same camel carrying the fish, as the smell was abominable and tainted everything it came into contact with. The Beduins on the journey fed their camels with the small sun dried fish and also partook of the same themselves without any attempt at cooking."

Visit of Agricultural and Geological Experts in 1919.

Agricultural Report.

At the request of the Sultan, then Sir Ghalib bin 'Awadh, K.C.I.E., experts were obtained from Egypt to examine and report on the agricultural and mineral possibilities of certain parts of his territory.

[654] 311 241 Mr. H. M. Heald, the agriculturist, visited Asfal Al 'Ain, the Sultan's estate at Fuwa, and the Wadi Meifa. As regards Asfal Al 'Ain, he reported that the whole country along the Wadis through which he travelled consisted of hills and wastes, and from an agricultural point of view was very disappointing. In this rocky region, land is scarce. In a few small hamlets, terraces have been made with soil collected in the wadis, and a few acres of these are cultivated, producing millets, sweet potatoes, dates, and tobacco on a poor scale. These terraces are irrigated from springs and wells, but the latter give very little water. No definite seasons are followed for sowing and harvesting of crops. In one village Mr. Heald saw a crop in three stages of growth, viz., newly-sown, half-grown, and harvested. The soil is generally a light shallow loam of alluvial nature, devoid of humus, and, cultivated as it is by the most primitive methods, is becoming more impoverished year by year. Very little manuring is done owing to the cost of transporting fish and the scarcity of dung.

At Fuwa he saw 250 acres of millet and tobacco cultivated by the Sultan's slaves. Owing to the poor soil and bad cultivation, the produce was but small and none of it marketed. The villages along the coast to the entrance of the valley near Ras Al Kalb are similar to those in Asfal Al 'Ain district, but the cultivation is poorer.

Mr. Heald estimated the total area of the soil in Sidara, cultivated and capable of being brought under cultivation, at about 14,000 acres, of which considerably more than one half consists of swampy or salty land at the mouth of the river at Hali. The total area of all the land fit for cultivation in the country he saw, he estimated at under 20,000 acres.

[312] Owing to insufficiency of water for irrigation purposes, Heald considered it would be difficult to reclaim any large area of land at the mouth of the river at Hali, as most of this land is either swampy or bad salty soil due to the river changing its mouth frequently after heavy rains coming down the valley from the interior. The water is also very salty. Another obstacle to developing this area, and, at present a very big one, is the unhealthy climate and the impure drinking water.

000 Mr. Heald concludes:

> "As regards settlers, it would, on account of the scarcity of land and the unhealthy climate at Meifa, be quite wrong to try and induce people to emigrate from India on a large scale, but a few could be settled at Fuwa and higher up the valley at Jol and Giswal. The present inhabitants, the Sybians, who are acclimatized, could then be sent to the mouth. As, however, this would only affect a very few thousands of acres, perhaps the expense would not be worth the trouble, and the

18 Ingrams G-3 (2934-39)1936 MM2 Hadhramaut MM2

monsoon." Perhaps now that I have visited Hasswein this ambition is nearer fulfilment for I do not think the inhabitants would have any objection.

Flying back from Qishn on one occasion we flew inland a good deal and it was most interesting to see some of the Mahra villages of the interior, as they were quite different from anything I had seen before. They were surrounded by thick low walls perhaps between 4 and 5 feet high and 3 feet thick. These walls not only surrounded the villages but their fields as well. It seemed to me that they said very little for security in the Mahra country. We crossed over the Wadi Maseila about half-way up it and its great deep gorge was most impressive from the air.

I hope I have succeeded in giving some idea of this fascinating country in which my lot is for the present cast, and in reaching which I have achieved a desire now fifteen years old. There is still much to be done in the Hadhramaut, but I think it is mainly by specialist surveys that we can help the people to make the most of it. Something has already been done in this direction, for in 1935 Dr. Storm of Bahrein made a leprosy survey, and at the same time Mr. Maxwell Darling investigated the locust question. This last winter we have been fortunate in having two very able American geologists, Dr. Pike and Mr. Wofford, who covered an incredible area on the ground and the whole country by air. It is hoped that most useful additions to the map will result from their work. It was good to have them there, for not only did they thoroughly enjoy the country but the country has thoroughly enjoyed them.

In the last couple of months Mr. V. L. Griffiths, Principal of Bakht er Ruda College in the Sudan, has travelled through the country and made a survey of the present educational resources and future needs. I believe his report will be of great value to us in this all-important matter. Next will come the investigation of the agricultural and water possibilities for which I believe we shall not have long to wait.

Apart from severely utilitarian investigations such as these there has been the visit of Miss Caton-Thompson, Miss Gardner, and Miss Stark, and one may expect that much light on the history and geology of the country will be forthcoming as a result of their researches. I do not know whether the Hadhramaut is likely to be so attractive in this regard as some people have thought in the past, for I believe that Miss Caton-Thompson is inclined to agree with an idea that I have long had that in the times of the old South Arabian kingdoms the Hadhramaut was rather on the fringe of things and that the most interesting area is probably that between Beihan and Marib.

I must not omit to mention that the Hadhramaut has twice had the honour of welcoming the Governor during the last year. On the first occasion when he opened the Al Kaf road he travelled all round the country for ten days, largely by car. He was so much entertained that he came to the conclusion that social life there was even more strenuous than in Aden. On the second occasion he brought with him Lord Dufferin, the Parliamentary Under Secretary of State for the Colonies, and with the honour of this visit the country may well claim to be "on the map." Lord Dufferin could only spare a day and a half, but visited Mukalla, Shihr, and Seiyun, and saw a good deal from the air.

There has been a good deal of reference to air travel in this paper, and I

29:Dunn S-4 (1952)1952 MI:Middle East
Hadhramaut HM2
Aden HM1

COTTON IN ARABIA

H 248 136 242

PESTS AND DISEASES

"At first, as was to be expected, the cotton crop as a whole was remarkably free from major pests and diseases, but these are now beginning to appear. Bacterial blight *(X. malvacearum)*, has not so far been evident, the land having started clean and the seed having been introduced from Tokar where the disease is not prevalent. The almost complete absence of rain during the growing season also makes any secondary spread of the disease unlikely.

"Jassids are present in small numbers and may tend to increase, and American bollworm *(Heliothis armigera)* is beginning to appear in quite large numbers in Abyan.

"At Lahej the most serious pests are the red bollworm *(Diparopsis castanea)* and the pink bollworm *(Platyedra gossypiella)*.

H 248

PROSPECTS

"It is unlikely that production of cotton in the Aden Protectorate will ever be on a very large scale as the area of land which can conveniently be flooded is limited. At present some 30,000 acres are in use in Abyan, of which 9,000 are under cotton and the target, when all proposed canals are finished, is about 50,000 acres, with cotton on about 20,000 acres in a good flood year. With developments in other areas the total area under cotton may be extended to 30,000 acres.

H 654 242

RESEARCH AND EXPERIMENTATION

"The Senior Entomologist of the Empire Cotton Growing Corporation, at the request of the Director of Agriculture, visited Aden in January 1951 to make a survey of the insect pest position, and the Corporation's senior officer in the Sudan is now spending half his time in Aden pending full time employment by the Abyan Board later. He has started selection work on the X1730 A seed from the Sudan and is arranging for regular supplies of pure seed to be produced in the area. In addition other strains are being tested in the variety trials and observation plots, including a strain of Wilds which matures very early and occupies the land for only six months. If this proves successful it might enable a food crop to be grown in the same year as the cotton crop.

"A Colonial office mission also visited Aden early in 1951 to examine the technical, agricultural and financial problems involved and to make recommendations for the development of the scheme and the establishment of any research work that may be needed."

A 101 [161]

ADEN

The crown colony of Aden located on a tiny peninsula on the coast of the protectorate actually dominates the area. Though the colony is only 75 square miles in area it has almost 100,000 people. The port of Aden has been an important trading center since the time of the ancients. This was the crossing point for the Abyssinians as early as 3,000 B.C. It was the final port of call for the Indian traders in the same century. It was also a chief port on the Indian trade route during the Roman times. Today Aden is the principal port and the commercial center for the entire Arabian Peninsula and one of the main crossing points for the African Moslems trekking to Mecca.

G. Gt. Brit., Colonial Office G-8 (1947) 1949 MM1 Aden
Hadhramaut MM81

Animal Husbandry	*Western Aden Protectorate*	*Eastern Aden Protectorate*
Camels	30,000	50,000
Cattle	45,000	10,000
Goats	500,000	420,000
Sheep	150,000	80,000

Soil Conservation

In Southern Arabia the rainfall is in general too low for an efficient natural vegetation to cover the slopes and act as a check to run-off. Only by the efficient use of all sources of water, particularly flood water, can cultivation continue. In these circumstances an effective system of soil and water conservation forms an integral part of traditional cultivation, and although there is a constant movement of the soil from the slopes to the flats, efficient run-off control results in comparatively little silt-laden water reaching the sea. Soil erosion occurs where flood waters are not controlled and in some areas overstocking has led to soil degradation.

The agricultural staff is at present very small but steps have been taken to improve the position.

The general view is that efforts to conserve soil should be directed to the maintenance and extension of flood-control systems. The districts of Abyan, Beihan and Ahwar and the Hadhramaut, which depend largely on a system of flood-water irrigation, have been selected as areas for improvement. In past years flood waters have gone to waste owing to local insecurity and poverty which resulted in the neglect of the deflectors and canals required for flood control. During the past few seasons active measures have been taken to remedy this state of affairs following an improvement in political conditions and by a system of advances to cultivators willing to undertake the restoration of their irrigation systems. Such flood-water control works must naturally go hand in hand with increased production measures. Special attention has been paid to Abyan where a Development Scheme is in operation.

On the Audhali plateau a system of advances to farmers who are willing to improve or sink wells or recondition terraces proved successful. Particular interest has been stimulated in areas where political difficulties have in the past caused neglect of such opportunities for the improvement of the natural resources.

Wind erosion is a factor of importance in the alluvial areas such as on the coastal plain where it affects areas which have been withheld from cultivation for long periods. In such situations dessication of the soil is followed by wind erosion. The remedy is to irrigate such soils and bring them back into cultivation

Study of Agricultural Techniques

(*a*) *Soils* are mainly alluvial. In the Eastern Protectorate they are almost everywhere derived from limestone. In the Western Protectorate soils in high-altitude districts are derived from the granite and elsewhere from the limestone series or from volcanic rock. Soils in irrigated areas

5:Gt. Brit., Colonial Office C-3 (1947) 1948 MM1 Aden
Hadhramaut MM21

134 are generally of good-quality alluvium. In high-altitude districts less fertile soils are found and they are generally light in texture, except in some limestone areas where they are heavy and intractable.

312 (*b*) *Water supplies* are generally good and sufficient for the needs of cultivators who tend to concentrate in the river-valley areas or in the highland areas where some rainfall can be expected. Water becomes scarce in the Eastern districts where the settled country emerges into the Empty Quarter. Domestic water supplies are obtained from springs, wells, dams, tanks and cisterns.

(*c*) *Irrigation and drainage systems* are highly developed. At high altitudes the run-off is led to terraces in order to boost the rainfall which is insufficient in itself for crop production. Flood irrigation systems are found in the river valleys and on the coastal plain. Irrigation from permanent streams and springs is highly developed. Artificial irrigation is from open wells. Animal power lifts are worked at depths of 10 to 60 feet and in the most favourable districts command up to 10 per cent. of the total arable area.

241 (*d*) *Mechanical cultivation* is confined to one small unit used by the Abyan Board in the Abyan district. Elsewhere the simple Arabian plough, combined levelling-board and scraper, harrow and a drill attachment for the plough comprise the implements used by the cultivator.

(*e*) *Application of fertilisers.* Organic fertilisers only are used. Farmyard manure is commonly used in all mid-altitude and highland districts. Farmyard manure, human excreta and town wastes are used in the Hadhramaut. Fish and guano are commonly used in the Eastern Protectorate coastal areas.

Land Tenure

423 (*a*) Customary tribal law and Shari'a law affect land tenure.

(*b*) Individual ownership is the common and most-desired form of tenancy; share tenancy is the usual form of leasehold tenure.

(*c*) His Majesty's Government owns no land in the Aden Protectorate. Some of the Arab states hold extensive tracts of land as state domain. All the land is held by indigenous inhabitants except for a very small percentage held by Yemeni settlers and a few Indians and Somalis.

Agricultural Credit

452 There are no banks in the Aden Protectorate. One small Farmers' Association giving credit assistance to its members was formed during
453 the year. The Department of Agriculture, the local Governments, and in the Wadi Hadhramaut a Relief Organisation afforded assistance to farmers with interest-free loans.

FISHERIES

654 A visit in February by the Fisheries Adviser to the Secretary of State
226 for the Colonies resulted in the arrival of a fisheries research party in

S:Gt. Brit. . Colonial Office G-3 (1947) 1949 MM1 Aden
Hadhramaut MM2

November. They began testing fish livers for vitamin-A content and also canning samples. Meanwhile several local merchants showed interest and applied for permission to set up canneries and the like. A board to consider such applications and fisheries development in general was set up.

FORESTRY

No true forests exist. Bush products exploited are timber, fuel, charcoal, fibres, gum incense and dragon blood.

Chapter 8: Social Services

EDUCATION

General

Education in common with other services is under the immediate general guidance of the British Agents. The Aden Government Department of Education inspects schools, gives such advice and assistance as is required, and co-ordinates so far as is possible educational development throughout the whole territory.

Policy

The general education policy in the Protectorates has been to build up self-supporting state Departments of Education as the states become sufficiently advanced for this to be possible. The intention has been that these departments should organise and control a system of village schools, central primary schools and, in the case of the larger states, intermediate schools.

Education Departments

Two such Education Departments are already in existence. One under the Mukalla Government in the Eastern Protectorate, with a Sudanese Director of Education (who is also Education Adviser to the British Agent), and an inspectorate of five local Arab inspectors. The other is at Lahej, 25 miles inland from Aden in the Western Protectorate, where Emir Ali, brother of the Sultan, performs the duties of Director of Education.

Higher Education

There is no higher education in the Protectorate, and there is no likelihood of full secondary education for some years to come. It is thus necessary to send abroad selected scholars who reach the required standard. There is at present one boy at Gordon College in the Sudan, and three there are at secondary schools.

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ADEN PROTECTORATE

PART IV

Chapter 1 : General Review

WESTERN ADEN PROTECTORATE

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There was a general improvement in security and in political matters during the year, but the economic situation remained at a low ebb owing especially to a poor rainfall in most areas.

721 622

It was found necessary to occupy Shaibi territory by force in order to put an end to the extremely oppressive rule of the Saqladi Sheikh. The Sheikh fled to the Yemen and the new administration introduced by Government was welcomed by all sections of the population. The area which is at a high attitude should prosper.

631

The Abyan Development Scheme in Fadhli and Lower Yafai territories made good progress, but relations between Government and the Lower Yafai Sultan continued to be unsatisfactory.

The administration of Subeihi territory was transferred for an experimental period to the Abdali Sultan.

654

Slow progress was made in the new Dhala (Amiri) administration, but a second season of drought hampered progress. Advances of grain to the value of some £15,000 were made to farmers in the area to prevent a complete economic collapse.

Revenues in the Fadhli and Dathina areas fell as a result of poor harvests.

The Beihan administration made good progress but received a setback towards the end of the year owing to the failure of the autumn harvest and later to frost damage on the well-irrigated wheat and barley crops.

There were no trade route incidents during the year.

EASTERN ADEN PROTECTORATE

648

The Qu'aiti-Kathiri boundary dispute was settled by the arbitration of the Resident Adviser, which both Sultans had agreed to accept as finally binding. When the time came to execute his decisions, the Qu'aiti Sultan showed considerable reluctance to surrender Sah and the Kathiri to surrender forts round Tarim.

665

Local political parties tended to lose their sting during the year. The Qu'aiti National Party became seriously involved in the question of the surrender of Sah (see above) and also supported, through its representatives within Mukalla Government, the claims of the Tamimi tribe to watch date palms.

721 648

Heavy raiding by Saudi tribes in the spring led to a meeting between

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241 the management of irrigation farming on some 5,000 acres. The value
242 of the Board's quarter-share of the net crop obtained, after paying harvesting and threshing expenses in kind, was estimated at over Rs. 1,25,000.

Farming in Abyan, largely influenced by the Board's operations, proved important to the economy of the Western Aden Protectorate. In the production of millet alone, it is estimated that a 30,000 bag crop, equal to 3,000 metric tons, was raised. A large portion of this was held as a reserve, or had been marketed to the easterly districts at the end of the year. General control on the export of this grain to Aden itself was maintained, and the flow of the crop to the districts to the east was encouraged.

The Wadi Hadhramaut Rehabilitation Scheme

•654 This was wound up by Government at the end of the 1947–48 financial
426 year. Farmers with outstanding loans were given ten years in which to repay, the basis of repayment being at the rate of 2 per cent of the total loan from the spring crop, 3 per cent from the autumn crop, and 5 per cent from the winter crop grown. By the end of the year, it was apparent that this system of deferred repayment was not proving satis-
[452] factory. Moneylenders had again become active, while late planting and reduced acreage were noticeable in many districts. This undoubtedly resulted from lack of foresight on the part of many farmers, who had failed to reserve sufficient seed and fodder and preferred to resort to moneylenders for obtaining their needs on credit.

406 At the end of the year, proposals were on hand for the introduction of numbers of diesel-driven irrigation pumps for use in the Wadi Hadhramaut.

Co-operation

476 The Beihan Farmers' Association, formed in the previous year, progressed in a satisfactory manner, and much useful experience was gained by the officials of the association. A good *saif* season helped the members, but this was followed by an almost complete lack of water in the *kharif*. In spite of these difficulties, the association was able to help its members in their requirements of seed, stock, and cash needed for well equipment and for concentrates for feeding livestock. At the end of the year, the association had acquired some Rs. 12,000 from members' subscriptions and from interest charged on loans.

476 This association cannot be termed a co-operative society in the true
659 sense of the word. It is an association which has the full support of the local Government, and which at present makes use of Government offices and storehouses for its activities. In the present stage of development this is considered to be the most desirable form of association for Beihan.

Western Aden Protectorate

226 The Western Aden Protectorate fisheries are of minor importance
361 compared with those of the Eastern Protectorate. Shuqra, the seat of
439 the Fadhli Sultan, is, however, a fishing port with a considerable export trade in dried fish

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trade in dried fish. Other fishing communities are small and the greater part of their population nomadic for part of the year. 226 [361]

Apart from the occurrence in summer of large migratory fish as described under the Aden Colony fisheries, there is a considerable cast-net fishery for sardines along the sand beaches east of Aden. West of Aden, sardines are rare but a small anchovy supports a fishery during the winter months.

Craft and gear are as described under Aden Colony fisheries.

Eastern Aden Protectorate

The fisheries of the Eastern Aden Protectorate are primitive but very productive. Previous observers have estimated the annual catch as over 50,000 tons of wet fish.

Sardines belonging to several species of Sardinella and Dussumieria normally abound on certain stretches of coast east of Mukalla all winter, when they support a very extensive cast-net and beach-sein fishery. [428] Utilisation is wasteful, the fish being either sun-dried for fertiliser and animal fodder or else rotted in order to free a putrid oil. The winter of 1948–49 has unfortunately been the worst sardine season within living memory.

Kingfish (*Scomberomorus*) abound in the vicinity of the sardine shoals [439] and are taken in large quantities in nets and on handlines. They are exported either wet-salted as "maleh" or salted and sun-dried as "safif".

Three species of tunny and several other large pelagic fishes are caught in considerable numbers and salted.

Sharks are taken in moderate numbers. The town of Qu'sair specialises in this fishery and sends small dhows to the Somali coast for the purpose. In general, the Somali coast is reckoned to be a better shark ground than South Arabia.

These fisheries are worked from huris, sambuks and small dhows as described under Aden Colony fisheries, using the most primitive gear. So great is the abundance at high and low tide close inshore, however, that even by these means the catch per man-hour exceeds that of many fully mechanised fisheries elsewhere.

During 1948 the fisheries of the Gulf of Aden, and particularly those 654 • of the Eastern Aden Protectorate, were surveyed under a Colonial Develop- 647 ment and Welfare Scheme, with a view to promoting their more efficient exploitation. The original schedule was unfortunately upset by failure to get two vessels equipped in time at Aden, but, although this hampered the work, experimental canning was carried out and liver oils tested for Vitamin "A" content early in 1948. Towards the end of the year, a taxonomist was appointed to confirm the identity of the commercial species. A full report on the survey will be published during 1949.

Following on the early findings of the Survey Party representatives of the Colonial Development Corporation arrived on the Eastern Protectorate coast towards the end of the year in order to go more fully into commercial possibilities. Unfortunately their visit coincided with a particularly poor sardine season.

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Plant Introductions

137 242 Sann hemp and Dolichus beans were introduced from the Sudan. Tepary beans, bunch-type groundnuts, and velvet beans were introduced from Uganda. These new introductions were planted in observation plots in the Abyan district.

The introduction of deciduous fruits and of citrus for planting in the Audhali Sultanate continued.

Development Schemes

654 *The Avyan Board.* During 1949 the scheme, now furnished with sufficient capital to embark on its work as a proving scheme, developed at a satisfactory rate in all fields where adequate staff, machinery, and materials could be mustered.

406 654 332 A rebuilt D.7 Caterpillar tractor complete with bulldozer and carry-all scraper, and three D.4 Caterpillars, one with bulldozer attachment, were obtained through the Crown Agents. These rebuilt tractors were delivered without any spares and gave a certain amount of trouble, but were responsible, together with a D.6 Caterpillar already in the hands of the Board, for great progress in irrigation construction.

Important extensions were made to the Ba Tes and Na'aza systems, while two new diversion systems were opened on the Wadi Hassan.

The tractors were generally worked as a fleet, with a mass of ox power owned or hired by the Board. Often 200 yokes of oxen—each with a scraper attached and each yoke with its driver/scraper operator in attendance—worked alongside the tractors. These were used for ripping and drawing masses of earth close to the dykes, which were then finished off by the oxen.

The value of the D.7 was judged to be equal to 150 to 200 yokes of oxen in earth-moving capacity, but for finishing off work and consolidation the use of oxen has been found to pay. Earth-moving costs have been low, and on short hauls of work of moderate height costs have not exceeded 6 annas per cubic metre.

654 Survey work has accelerated and a staff of 6 surveyors was at work in the field at the end of 1949.

A great deal of the Board's effort was devoted to the construction of offices, workshops and staff houses. At the end of 1949 substantial progress had been made and building, apart from some additions to staff houses and a projected pilot ginnery, had been completed.

The Board staff was increased considerably. On irrigation matters the Board continued to receive advice from Mr. N. Simansky, Irrigation Adviser to the Government of Jordan, who visited Abyan twice during the year. In September the staff was strengthened by the addition of an Irrigation Engineer, Mr. Douglas Hall, who joined the Board as Chief Engineer. In November Mr. B. May joined the Board on secondment, as Chief Accountant, the office having remained vacant since the resignation of the first Accountant Officer at the end of March. These two appointments were long overdue, and serious arrears of work had to be faced by both officers on taking up their appointments. In the

7: Gt. Brit., Colonial Office G-3 (1949-50) 1951 MM1 Aden
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accounts section the position was particularly serious; but equally important was the lack of essential hydrological data on such matters as river discharges, the availability of suitable storage sites, studies on percolation and so on. Without such information progress must be delayed.

As mentioned earlier, the X1730A type of cotton planted on 82 acres in 1948, proved a great success. The crop was ginned and marketed by the Board, and arrangements with cultivators for the new season's planting resulted in an extension of the acreage to 1,097 acres. At the end of 1949 the crop showed great promise, and in many areas appeared even better than the previous year's crop.

Grain, oil-seed and fodder production was satisfactory, though grain yields were reduced in many areas through double-cropping the land with a sorghum fodder crop in the Saif season and then a grain crop in the Kharif.

A great deal of the land in Abyan which has been well irrigated for the past five years is now becoming heavily infested with weeds, mainly the weed grass *Desmostachya bipinnata*. The introduction of cotton as a cleaning crop and the "drying up" and resting with or without cultivation, of these heavily infested lands is now recognised as an urgent matter. In order to tackle the weed problem the Board increased its tractor strength by the purchase of three Fowler Diesel crawler tractors in the last quarter of 1949.

Another problem which came to notice towards the end of 1949 was the rapid rise in the height of the water table in certain areas. The area involved does not exceed 300 acres, but already in this area (where in places the water table has risen to within six feet of the surface) salts are appearing in the upper layers of the soil, and vegetation, particularly in the seedling stage, has been affected. It was noticed that cotton, once established, flourished and appeared exceedingly healthy on these salt-impregnated soils.

Anti-Famine Measures

In the first four-and-a-half months of 1949 until general rains fell over the Eastern Protectorate, famine again threatened human life in the Hadhramaut. Relief measures were introduced, as in the previous famine, but this time so promptly that practically no deaths from famine occurred. Again aircraft of the Royal Air Force came to the rescue and dropped grain supplies to the worst affected areas. Large quantities of grain were moved inland by motor transport and any camel transport that could be mustered; at the same time large numbers of the destitute, particularly women and children, were brought down or walked down to the coastal towns, where they were accommodated in refugee camps and fed. To employ labour on relief works an extensive programme of road construction, and irrigation repair works and new construction was undertaken.

When rain fell, it was again found necessary to issue loans to

7: Gt. Brit., Colonial Office G-3 (1949-50) 1951 MM1 Aden
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still far below anything within living memory prior to 1948–49. In consequence there has been no surplus for export from the Qu'aiti coast, the Qu'aiti merchants having had, in fact, to import much of the small surplus from the Mahra coast for consumption inland. 228

Six fishery statistical posts have been established on the Qu'aiti coast in the Eastern Aden Protectorate and three in the Abyan area of the Western Aden Protectorate. They are financed by His Majesty's Government through the Fishery Department, but are administered by the states in which they are situated.

Because of the poor fishing seasons plans for promoting the export trade have been postponed. Preliminary trials are in hand for salt-curing sardines on the Eastern Aden Protectorate coast, to provide a cheap protein food for the agricultural labourers in the Wadi Hadhramaut and the Abyan area. The first small batches of fish were very well received. Now larger quantities are being tested for keeping qualities, as the most acute shortage of cured fish occurs during the summer when no sardines are being caught. At present the poorest people eat the dirty and rancid sun-dried sardines in the wadi and semi-putrid small fishes in Abyan. 228 258 262

A scheme is in preparation at Shihr, on the Qu'aiti coast, for mechanising the local fishing sambuks with outboard motors. These craft are sewn together with coir twine and are too flexible to take a normal inboard installation, but by fitting a flat hog in place of the keel, it is possible to ship an outboard motor through a trunk. The Qu'aiti State has financed a loan to a selected fisherman with which he will purchase the first sambuk and outboard. The sambuk is now being altered under Fishery Department supervision, and the Aden agents have the engine waiting. 501 228 654

An interesting development on the Qu'aiti coast is the building at Mukalla, for a local merchant, by Italian engineers and technicians, of a cannery with a capacity of from 500 to 1,500 yellow-fin tunny per day. This merchant has also recently brought an 80-ft. diesel-engined fishing vessel from Italy as well as two small motor launches. The cannery is in operation and samples opened have proved to be excellent. It is to be hoped that the project succeeds, as it is not only a bold step deserving of success as such, but also a source of local employment and of exports, both of which are needed in that area. 255 228

Chapter 8: Social Services

EDUCATION

General

Education in common with other services is under the immediate general guidance of the British Agents. The Aden Government Department of Education gives such advice and assistance as is required, and co-ordinates, so far as is possible, educational development throughout 871

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ADEN PROTECTORATE

PART IV

Chapter 1: General Review

WESTERN ADEN PROTECTORATE

642 THE years 1951 and 1952 were marked by (a) Government penetration
648 into the Upper Aulaqi Sheikhdom (Maan) at the invitation of the Ruler and the subsequent formation of the United Administration of Maan and Khalifa; (b) the conclusion of two Advisory Treaties with the Upper Aulaqi Sheikh and Audhali Sultan (May and July, 1952)
647 and a joint Advisory and Protectorate Treaty with His Highness the Sultan of Lahej; (c) the formation of the Fadhli—Lower Yafa' Health Board; and (d) the formation of the Lower Aulaqi Regency Council in Ahwar (August, 1952).

Politically the period under review was one of consolidation and development of the administrations of the various States in the Protectorate.

438 The Abyan Board did well in 1951 when it sold 9,890 bales of cotton for £867,088. In 1952 the rains were not so plentiful with the result that only 6,300 bales were sold for £725,810.

648 Relations with the neighbouring Kingdom of the Yemen remained difficult in spite of the Modus Vivendi Agreement concluded with it in London in January, 1951. Interference in affairs well inside the Protectorate boundary was a cause of friction.

EASTERN ADEN PROTECTORATE

622 In the Qu'aiti and Kathiri States the main constitutional advance has been in the setting up of town and village councils to deal with local affairs.

659 Of necessity both Administrations have been preoccupied with measures to combat the threat of food shortage which must always be
654 faced in this region of uncertain rainfall. The States and local author-
653 ities have maintained dumps of grain, which are designed to tide over a period of scarcity before imports can arrive from the coast, and a
245 periodical check is made on resources of motor transport to ensure that distribution of supplies is not held up by failure of camel traffic in an emergency. Positive measures have been taken to increase local food supplies. Funds have been allocated for loans to farmers to purchase pumps to increase areas of cultivation. Schemes for the rebuilding of dams and for flood control have been put into effect. Particular attention has been paid to the rehabilitation of date palms.

8:Gt. Brit., Colonial Office G-3 (1951-52)1914 MM1 Aden Hadhramaut MM2

There has been close co-operation between the two States; they jointly operate a workshop in Sai'un for repairs of pumps and agricultural machinery and maintain an Agricultural Department in the Wadi.

In the Wahidi Country an administration has been set up under the advice of a Political Officer. Progress in extending the administration to outlying areas has continued and a start has been made in local government in the few small towns of the area. Experiments have been carried out in cotton and sugar cultivation.

The Sultan of Mahra and Socotra died in February, 1952. In Socotra Sultan Isabin Ahmed Afrar has been elected his successor but he has not been given formal recognition by Government as his election has not yet been confirmed by the mainland chiefs.

Details of Colonial Development and Welfare Schemes in progress during the period are given in Appendix II at the end of the report.

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427 principal system involves some form of share-tenancy in which the partners divide the crop after harvesting, threshing and winnowing charges and tithes and taxes have been paid in kind. In more fertile areas half of the crop is demanded of the tenant of flood irrigated land, while in the mountain terrace-farming areas a share of one-third is normally levied. In the arid eastern districts shares of one-tenth only may be asked. On lift irrigation systems share-tenancy arrangements vary greatly. In the East, the owner of the land and the well may take a one-tenth share. In the West, the owner of the land and the well may take up to one-half of the crop, though often a share of the seed used and a share in the labour working on the lift irrigation is pro-
423 vided by the landowner. The Qua'iti and Kathiri States have secured legal powers by an agricultural administrative order to further the consolidation of plots round suitable irrigation points, but so far it has been unnecessary to apply such orders.

647 The Department of Agriculture has initiated important programmes for the development of land and water resources. Of particular note
• 664 is the Abyan Scheme in the Western Protectorate and the pump scheme in the Wadi Hadhramaut in the Eastern Protectorate. At the same time encouragement and organisation in the better use of the excellent indigenous systems of irrigation farming have been the main preoccupation in many districts.

423 Little satisfactory progress has been made in land settlement in the Abyan area. In the Eastern Protectorate, the States, advised by the
406 Residency, are actively encouraging groups of farmers to combine their holdings formerly watered by animal lift in order to make the co-operative use of the mechanical pump lifts an economic proposition.

241. AGRICULTURE

Principal Crops, 1952

	Acres	*Tons*	
Western Protectorate			
Sorghum Millet	23,333	4,333	
Bullrush Millet and other small millets	9,000	1,286	
Wheat	3,000	2,000*	
Barley	6,000	4,000*	
Sesame	4,250	425	
Cotton (long staple)	9,830	7,206	bales of 400 lb. lint*
Coffee	400	100	
Eastern Protectorate			
Sorghum Millet (lift and permanent flow irrigated)	3,000	2,400	
Sorghum (flood irrigated)	4,000	400	
Bullrush Millet and other small millets	1,500	300	
Wheat	2,600	3,000	
Date Palms	10,500	7,000	

* Crops sown in 1951 and harvested in 1952.

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Agricultural Extension and Improvement Schemes

The main development scheme for irrigated land use is that in Abyan. A note on the scheme is given in Appendix I, page 84.

The extension work of the Department of Agriculture is carried on through departmental staff and through State agricultural departments where these exist. Extension work at the moment is mainly confined to a few selected subjects such as cotton growing, fruit and vegetable growing, and lift irrigation by pump.

Cotton Growing Schemes (other than at Abyan). Long-staple X.1730A cotton was introduced for cultivation to the Yeramis district, and from an area of approximately 400 acres some 472,665 lb. of seed cotton were marketed.

In Ahwar, where X.1730A cotton was grown for the second season, 436,311 lb. of seed cotton were marketed from an effective area of 400 acres.

The Hadhramaut Pump Scheme. In the Hadhramaut there has been considerable development of lift irrigation by diesel-engine pumping units since 1948. It is claimed that 389 pump units with an estimated total horse-power of 3,640 have now been introduced. A large percentage of the units have been sold by the Hadhramaut States to local farmers on a deferred payment scheme.

In 1952 pump units irrigated 37 per cent of the total area under lift irigation in the Hadhramaut. The average area irrigated per pump unit is estimated at 8.3 acres as compared with 2 acres by animal lift. The yield from pump irrigated crops in nearly all cases is found to exceed comparable animal lift irrigated crops. The schemes may be criticised on account of the high horse-power used for the irrigated area, but on the other hand with less working hours per day the machinery should theoretically last longer.

Credit Facilities

In the Western Protectorate advances have been made through Farmers' Associations, through the Abyan Board and through local States to assist farmers. In the Eastern Protectorate, particularly the Hadhramaut, large sums of money have been advanced since 1944 to enable farmers, or groups of farmers, to maintain local irigation systems and to help farmers to buy pumping machinery by hire purchase. Little or no progress can be made in the development of agriculture without credit facilities.

Agricultural Department

The staff comprises the Director of Agriculture, four Agricultural Officers, one Assistant Agricultural Officer and nine Agricultural Instructors.

The Department is responsible for giving advice on agriculture and, in many areas, for the organisation and administration of agricultural development projects. During the financial year 1952–53 it budgetted to spend £19,000.

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The Ahwar Farmers' Association was started with the nomination by the Regent of a chairman and managing committee of 12, assisted by a secretary. The committee functioned during 1952 as a kind of Agricultural Board to deal with local irrigation arrangements, cotton growing and marketing, and development work. It provided a useful link between the Department of Agriculture and the farming community.

FISHERIES

The same type of fishing is carried out in the Protectorates as in the Colony with more emphasis on beach seines. The most extensive fishery is the coast from Mukalla eastwards to beyond Qishn. In the winter months sardine of the Sardinella and Dussumreria types are found together with *Scomberomerus spp.* and tunny. The Western Protectorate coast in winter generally supports an intensive fishery for anchovy (*Stolephorus indicus*) by beach seines. In addition a small shrimp is also caught by this method. The fisheries are localised but seasonal fishermen tend to follow the shoals along the coast.

Encircling gill nets, bottom nets and lift nets are little used in the Protectorate as local opinion is strongly opposed to methods of increasing yields for fear that the fish will become extinct.

Fishing is financed in the same way as in Colony by merchants. Fish, surplus to normal requirements, is salted and dried for export to India, Africa and Ceylon but there is considerable local consumption inland. Dried sardines are used for camel fodder, tobacco fertiliser and human consumption. One fish factory for canning tunny and sardines, which was established in Mukalla in 1950 and which used an Italian trawler for supplies, has had to close down owing to lack of capital. Fish meal was also produced at this factory. No cold storage or ice-making plants exist.

Marketing arrangements are the same as in the Colony: fish prices are about 50 per cent lower for the consumer in the Protectorate.

The sardine fishery which had failed for three years showed signs of revival in the early winter of 1951 along the Eastern Protectorate coast. Shoals of larger fish were also abundant and the upward trend has again been noticed in the winter of 1952.

The Fisheries Department is described on page 27. It has surveyed little of the Protectorate waters except by Danish seine netting. The results have been exceptionally poor owing to the rough nature of the bottom. Plans for extensive and intensive work in the Protectorates have been delayed because of schemes in the Colony. A certain amount of work has been done in Western Protectorate waters from Perim to beyond Shuqra but only one area showed signs of promise with Danish seine nets: half a ton of *Lethrinus spp.* was the best single individual haul. The fishermen from Aden Colony range into the Western Protectorate and on three nights at the end of the Shamal of 1952, with assistance from the Fisheries Department vessel, secured 14½ tons of *Scomberomerus spp.* from the west of Aden. These co-operative efforts will be resumed in the Shamal of 1953.

8:Gt. Brit., Colonial Office G-3 (1951-52)1954 MM1 Aden
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APPENDIX 1

THE ABYAN SCHEME

Purpose

(a) To utilise all surface flow and suitable underground supplies of water in order to develop and maintain irrigation farming in the Abyan district.

(b) To organise and develop the production of food crops and cash crops, and to assist in their marketing.

(c) To increase the wealth and prosperity of the people and the Governments of the local States and of the Protectorate.

Background

The Abyan district is one of ancient development for irrigation farming. Centuries of insecurity made the area derelict, until the settlement of a feud and the entry of H.M. Government to maintain law and order.

From 1941 to 1943 efforts were made to restore, by traditional methods, irrigation of the southern part of the district. In 1943 Government entered the derelict areas of the southern and central sections and a four-year development plan was started to restore and maintain irrigation systems on traditional lines. Control was in the hands of the Department of Agriculture; funds were provided by the Colony of Aden as part of the increased food production campaign; irrigation charges of one-quarter share of the crop were levied.

In 1947 the Abyan Board was formed by an administrative order of the Governor of Aden. The Board was accepted by the two States whose territories were covered by the schemes. In December, 1948, a loan of £20,000 was approved from Colonial Development and Welfare funds. In August, 1948, a further £250,000 was approved. With these funds the Board embarked on the initial stages of its plan of development.

Organisation

Development was on a partnership basis between:

(a) Landowners (the States, private individuals or trusts) who provide land;

(b) owner occupiers and tenant farmers who provide the working animals, implements, general farming capital, and the labour for crop production; and

(c) the Board, a development authority, which undertakes the construction of irrigation works, maintains the irrigation system, and regulates the distribution of irrigation water. The Board also maintains special control over the cotton crop which is sold to the Board at agreed prices, processed in the Board's ginneries, and sold to the Raw Cotton Commission.

Up to 1949–50 agricultural production was primarily concerned with the cultivation of sorghum and sesame. Trials with long-staple

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cotton, introduced in 1946, proved successful and this crop has now been chosen as the main crop for the area.

Payment for irrigation services has always been based on a crop share of 25 per cent payable to the Board. The present crop share and taxation on the crop, as laid down in an agreement dated 1st April, 1950, is as follows :

PARTY	LIVE LAND (*Land developed and cultivated for 5 years*)	DEAD LAND (*New land opened for cultivation*)
	%	%
State (Taxation) . .	5	10
Landlord . . .	20	15
Tenant . . .	50	50
Board . . .	25	25

To secure rapid development, traditional methods have been used while the land has been surveyed and existing canal systems aligned and new canals of improved design have been constructed. Diversion is still by traditional methods but regulators have been constructed in the upper part of the district.

Land and Water Rights

The Board does not own or control any land except building sites and experimental areas loaned from the local States and, in one case, rented from a landowner.

The Board controls the diversion and distribution of all flood water in the district. In the winter season the Board purchases the permanent flow of the Bana River from the Lower Yafai Sultan and his relatives and distributes this supply through the canal system to farmers who pay the customary crop share to the Board.

Tribal boundaries and settlements of title to the area have been ill defined in the past years of insecurity, but in 1951 final decisions were taken regarding tribal boundaries.

Survey

Since 1948 an area of 100,000 acres has been contour surveyed to a one metre interval. Geophysical surveys, the first as a reconnaissance and the second in fairly detailed form, have been made.

Irrigation Development

Development is in various stages. An area of approximately 30,000 acres of land is now controlled for irrigation farming, mainly on traditional lines. The normal flood flow to the area is expected to be sufficient to crop 30,000 acres yearly. In the 1951 flood a discharge of 224,000,000 cubic metre was observed to reach Abyan in the Bana River and this quantity, if correctly controlled, would have been sufficient for the irrigation of 50,000 acres. In actual fact only 30,000 acres were irrigated. The system is to direct flood water at speed, by diversion weirs made of brushwood and stone, into canals

8:Gt. Brit., Colonial Office G-3 (1951-52)1954 MM1 Aden
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654 which carry the water to bunded fields where the land is inundated to
312 approximately one metre in depth. In the lower part of the district complete diversion of the flood is made by larger earth dams built
241 across the river bed. Generally one metre depth of water is sufficient to raise the crops of sorghum, sesame and cotton, though summer planted crops which have to grow when water is low are given one or two supplementary irrigations.

The date of arrival of the floods is uncertain and the pattern of crop production may alter considerably according to the date of irrigation. For instance, early summer floods will only be used for sorghum fodder, grain, melons and sesame. Later summer irrigations are particularly required for cotton planting and for the autumn sown sorghum crop.

The Farming System

Skilled cultivation is carried on by settlers from many South Arabian tribes who have come to the area since the start of the scheme. Bunding of land, construction of field channels, ploughing and sowing are carried out by draught animals, mainly oxen though camels are brought in to help occasionally. No fertilisers are used at present ; the flood brings with it a heavy burden of silt which reaches the land and maintains its fertile state.

The basic problems concern the farming system. One is largely an irrigation problem caused by a rapid rise in the water-table which has taken place since irrigation was resumed. This rise in the water-table has caused an accumulation of salts in the upper layers of the soil, and has already made crop production on 2,000 acres practically impossible by flood irrigation methods. The other problem is weed control. As a gross area of 100,000 acres may be commanded in the future, and within this area an annual average of 30,000 acres may be cropped, it should be possible to afford long periods of fallow to land in order to reduce the dangers which may arise from heavy irrigation ; but individual ownership of land will greatly complicate such arrangements.

248 At the present time the cotton variety X.1730A, a derivative of
243 Sakel, is the main cash crop grown. All other cash crops in the
246 scheme are common to those of other irrigation tracts of a similar type in South Arabia though there are experimental crops, of which sugar is one. An important feature of the scheme is the need for a large area of sorghum for grain and fodder production. The draught animals depend almost entirely on sorghum fodder for their sustenance and the main food of the people is sorghum millet. It is expected that for some time two-thirds of the area will be maintained under sorghum and one-third under cotton.

Mechanical Equipment

406 The Board owns earth-moving machinery powered by diesel-engined
242 crawler tractors with carry-all scrapers, bulldozers, a ripper and grader and two drag-line scrapers. The policy of the Board is to increase the

63:Simmons et al G-5 (1941-1951) 1964
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established to supply the local market—for the processing of soaps, pressed aluminum utensils, cigarettes, pottery and textiles, the extraction of sesame oil, the cutting of buttons from trochas shells and the building of dhows. Fishing is of potential importance, but its development is handicapped by primitive methods of procurement and handling and inadequate local transport facilities. The agricultural resources of the Colony are limited to market gardens and date groves on the oasis of Sheikh Othman.

Agriculture and fishing are the principal occupations of the tribesmen of the Protectorate. The fisheries of the eastern districts are reputed to be among the richest in the Middle East, while the drying and salting of fish and the manufacture of fish oils, fodder and manure are valuable industries in the coast towns. A large proportion of the people in Western Aden Protectorate and the Hadhramaut engage in agriculture, although the tribes of the steppe country are mainly nomadic pastoralists. The expansion of farming is curtailed by uncertain rainfall and shortage of water supply. In the Eastern Aden Protectorate, cultivation is restricted mainly to the middle portions of the Hadhramaut valley, where the river flows for part of the year. This region is historically famous as a source of frankincense and myrrh. Elaborate terracing and irrigation are employed in many areas for the conservation and the utilization of the limited water resources available. It was estimated in 1948 that less than 0.5 per cent of the total land area was suitable for farming, but the relative extent of pasturage and desert has not been determined. Systems of peasant ownership, tenancy farming and tribal land tenure prevail in different localities. The improvement of agriculture and expansion of irrigation are prominent among the development programs for the Protectorate. A co-operative project for the cultivation of cotton and other crops by modern methods has recently been initiated on 5,000 acres in the Abyan area in Western Aden Protectorate. Little

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